IN THE CLAIMS:

Please rewrite claims 1, 16 and 28, as shown below in the detailed listing of all claims which are, or were, in this application:

1. (Currently Amended) A solid catalyst component for the polymerization of olefins, comprising

a magnesium halide in active form, and, supported thereon,

a titanium compound containing at least one Ti-halogen bond and

a cyclopolyenic 1,3-diether in which only the carbon atom in position 2 belongs to a cyclic or polycyclic structure made up of 5, 6, or 7 carbon atoms, or 5-n or 6-n` carbon atoms, and respectively n atoms of nitrogen and n` heteroatoms selected from the group consisting of N, 0, S and Si, where n is 1 or 2 and n` is 1, 2 or 3,

wherein said structure ~~containing~~ contains two or three unsaturations and optionally

~~being~~ is condensed with other cyclic structures,

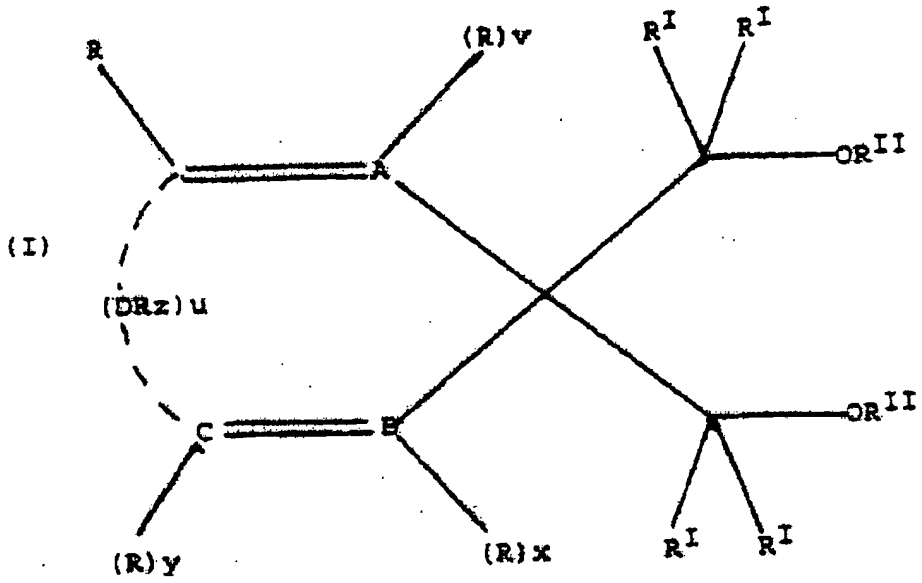
or is substituted with one or more substituents selected from the group consisting of linear or branched alkyl radicals; cycloalkyl, aryl, aralkyl, alkaryl radicals and halogens,

or ~~being~~ is condensed with other cyclic structures and substituted with one or more of the above mentioned substituents which can also be bonded to the condensed cyclic structures; one or more of the above mentioned alkyl, cycloalkyl, aryl, aralkyl or alkaryl radicals and the condensed cyclic structures optionally containing one or more heteroatoms as substitutes for carbon or hydrogen atoms, or both.

2. (Original) The solid catalyst component of claim 1, where the carbon atoms in positions 1 and 3 in the cyclopolyenic 1,3-diether are secondary.

3. (Original) The solid catalyst component of claim 1, where the substituents in the cyclopolyenic 1,3-diether are selected from the group consisting of linear or branched C_1-C_{20} alkyl; C_3-C_{20} cycloalkyl; C_6-C_{20} aryl; C_7-C_{20} aralkyl and C_7-C_{20} alkaryl radicals; Cl and F.

4. (Previously presented) The solid catalyst component of claim 1, where the cyclopolyenic 1,3-diether is selected from the compounds of the general formula:



where A, B, C and D are carbon atoms or heteroatoms selected from the group consisting of N, O, S and Si; v, x and y are 0 or 1; u and z are 0 or 1 or 2;

provided that when u = 0:

i) A, B and C are carbon atoms and v, x and y are equal to 1; or

ii) A is a nitrogen atom, B and C are carbon atoms, v is equal to 0 and x and y are equal to 1; or

iii) A and B are nitrogen atoms, C is a carbon atom, v and x are equal to 0 and y is equal to 1; or

iv) A and B are carbon atoms, C is a nitrogen atom, v and x are equal to 1 and y is equal to 0;

when u = 1:

1) A, B, C and D are carbon atoms, v, x and y are equal to 1 and z is equal to 2; or

2) A and B are carbon atoms, C is a nitrogen atom, D is an oxygen atom, v and x are equal to 1, y and z are equal to 0; or

3) A, B and C are carbon atoms, D is an oxygen, nitrogen, sulfur, or silicon atom, v, x and y are equal to 1 and z is equal to 0 when D is an oxygen or sulfur atom, equal to 1 when D is a nitrogen atom, and equal to 2 when D is a silicon atom;

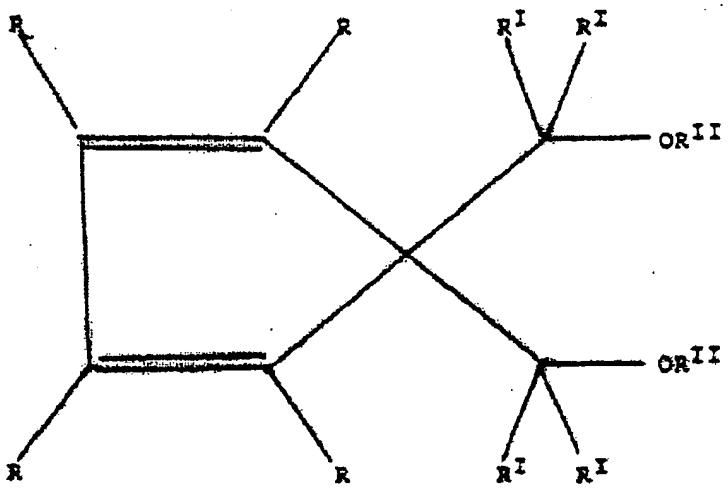
when u = 2:

A, B and C are carbon atoms, D represents two carbon atoms bonded to each other by a single or double bond, v, x and y are equal to 1 and z is equal to 1 when the couple of carbon atoms D is bonded by a double bond, and equal to 2 when said couple is bonded by a single bond; radicals R and R^I, equal or different, are selected from the group consisting of hydrogen; halogens, C_1-C_{20} alkyl radicals, linear or branched; C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} alkaryl and C_7-C_{20} aralkyl radicals; the R^{II} radicals, equal or different, are selected from the group consisting of C_1-C_{20} alkyl

radicals, linear or branched; C_3-C_{20} cycloalkyl, C_6-C_{2C} aryl, C_7-C_{20} alkaryl and C_7-C_{20} aralkyl radicals, and two or more of the R radicals can be bonded to each other to form condensed cyclic structures, saturated or unsaturated, optionally substituted with R^{III} radicals selected from the group consisting of halogens; C_1-C_{20} alkyl radicals, linear or branched; C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} alkaryl and C_7-C_{20} aralkyl radicals; said radicals from R to R^{III} optionally containing one or more heteroatoms as substitutes for carbon or hydrogen atoms, or both.

5. (Original) The solid catalyst component of claim 4, where the cyclopolyenic 1,3-diether is selected from the compounds of the general formula:

(II)



where the radicals R and R^I, equal or different, are selected from the group consisting of hydrogen; halogens; C_1-C_{20} alkyl radicals, linear or branched; C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} alkaryl and C_7-C_{20} aralkyl radicals; the R^{II} radicals, equal or different, are selected from the group consisting of C_1-C_{20} alkyl radicals, linear or branched; C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} alkaryl and C_7-C_{20} aralkyl radicals, and two or more of the R radicals can be bonded to each other to form condensed cyclic structures, saturated or unsaturated, optionally substituted with R^{III} radicals selected from the group consisting of halogens; C_1-C_{20} alkyl radicals, linear or branched; C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} alkaryl and C_7-C_{20} aralkyl radicals; said radicals from R to R^{III} optionally containing one or more heteroatoms as substitutes for carbon or hydrogen atoms, or both.

6. (Original) The solid catalyst component of claim 5, where the cyclopolyenic 1,3-diether is selected from the group consisting of:

1,1-bis(methoxymethyl)-cyclopentadiene;

1,1-bis(methoxymethyl)-2,3,4,5-tetramethylcyclopentadiene;

1,1-bis(methoxymethyl)-2,3,4,5-tetraphenylcyclopentadiene;

1,1-bis(methoxymethyl)indene;

1,1-bis(methoxymethyl)-2,3-dimethylindene;

1,1-bis(methoxymethyl)-4,7-dimethylindene;

1,1-bis(methoxymethyl)-4-phenyl-2-methylindene;

1,1-bis(methoxymethyl)-7-(3,3,3-trifluoropropyl)indene;

1,1-bis(methoxymethyl)-7-trimethylsilylindene;

1,1-bis(methoxymethyl)-7-trifluoromethylindene;

1,1-bis(methoxymethyl)-7-methylindene;

1,1-bis(methoxymethyl)-7-cyclopentylindene;

1,1-bis(methoxymethyl)-7-isopropylindene;

1,1-bis(methoxymethyl)-7-cyclohexylindene;

1,1-bis(methoxymethyl)-7-tert-butylindene;

1,1-bis(methoxymethyl)-7-tert-butyl-2-methylindene;

1,1-bis(methoxymethyl)-7-phenylindene;

1,1-bis(methoxymethyl)-2-phenylindene;

9,9-bis(methoxymethyl)fluorene;

9,9-bis(methoxymethyl)-2,3,6,7-tetramethylfluorene;

9,9-bis(methoxymethyl)-2,3,4,5,6,7-hexafluorofluorene;

9,9-bis(methoxymethyl)-2,3-benzofluorene;

9,9-bis(methoxymethyl)-2,3,6,7-dibenzofluorene;

9,9-bis(methoxymethyl)-2,7-diisopropylfluorene;

9,9-bis(methoxymethyl)-1,8-dichlorofluorene;

9,9-bis(methoxymethyl)-2,7-dicyclopentylfluorene;

9,9-bis(methoxymethyl)-1,8-difluorofluorene;

9,9-bis(methoxymethyl)-1,2,3,4-tetrahydrofluorene;

9,9-bis(methoxymethyl)-1,2,3,4,5,6,7,8-octahydrofluorene;

9,9-bis(methoxymethyl)-4-tert-butylfluorene.

7. (Original) The solid catalyst component of claim 4, where the cyclopolyenic 1,3-diether is selected from the group consisting of 9,9-bis(methoxymethyl)xanthene and 9,9-bis(methoxymethyl)-2,3,6,7-tetramethylxanthene.

8. (Original) The solid catalyst component of claim 1, where the titanium compound is selected from the group consisting of halides and halogen alcoholates.

9. (Original) The solid catalyst component of claim 8, where the titanium compound is titanium tetrachloride.

10. (Original) The solid catalyst component of claim 1, where the cyclopolyenic 1,3-diether is present in quantities ranging from 5 to 20% molar with respect to the magnesium halide.

11. (Original) The solid catalyst component of claim 1, where the Mg/Ti ratio is from 30:1 to 4:1.

12. (Original) A catalyst for the polymerization of olefins comprising the product of the reaction of:

a) the solid catalyst component of claim 1, with

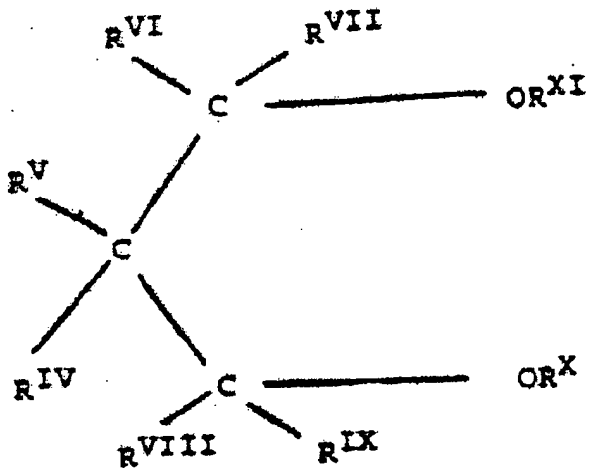
b) an Al-alkyl compound, and optionally

c) an electron-donor compound other than the cyclopolyenic 1,3-diethers.

13. (Original) The catalyst of claim 12 where the Al-alkyl compound b) is an Al-trialkyl.

14. (Original) The catalyst of claim 12, wherein the electron-donor compound c) is selected from the group consisting of silicon compounds containing at least one Si-OR bond, where R is a hydrocarbon radical, 2,2,6,6-tetramethylpiperidine, 2,6-diisopropylpiperidine, and carboxylic acid esters.

15. (Original) The catalyst of claim 12 wherein the electron-donor compound c) is selected from the compounds having the general formula:



where R^{IV}, R^{V}, R^{VI}, R^{VII}, R^{VIII} and R^{IX} are the same or different and are hydrogen; linear or branched C_1-C_{18} alkyl, C_3-C_{18} cycloalkyl, C_6-C_{18} aryl, C_7-C_{18} aralkyl or alkaryl radicals, provided that only one of R^{IV} and R^{V} can be hydrogen; R^{X} and R^{XI} have the same meaning as R^{IV} and R^{V} except for hydrogen, provided that when the radicals from R^{V} to R^{IX} are hydrogen and R^{X} and R^{XI} are methyl, R^{IV} is not methyl; moreover, two or more of the R^{VI} to R^{XI} radicals can be bonded to form a cyclic structure.

16. (Currently Amended) A catalyst for the polymerization of olefins comprising the product of the reaction between:

a[1]) a solid catalyst component comprising a magnesium halide in active form and, supported thereon, a titanium compound containing at least one Ti-halogen bond and an electron donor compound;

b) an Al-alkyl compound;

c) a cyclopolyenic 1,3-diether in which only the carbon atom in position 2 belongs to a cyclic or polycyclic structure made up of 5, 6, or 7 carbon atoms, or 5-n or 6-n` carbon atoms, and respectively n atoms of nitrogen and n` heteroatoms selected from the group consisting of N, O, S and Si, where n is 1 or 2 and n` is 1, 2 or 3,

wherein said structure ~~containing~~ contains two or three unsaturations and optionally

~~being~~ is condensed with other cyclic structures,

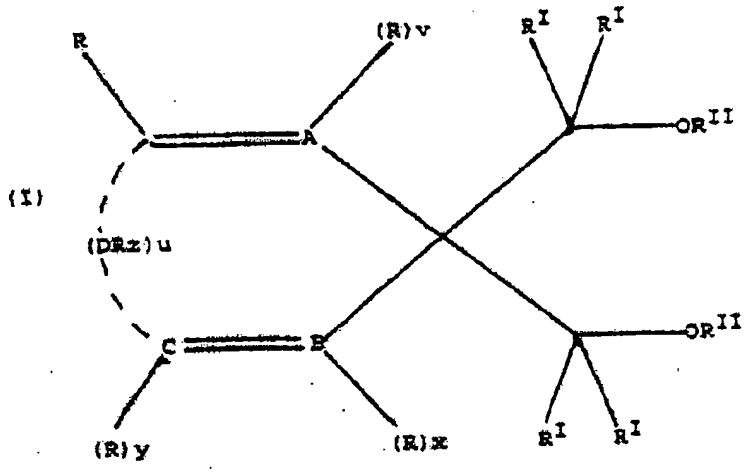
or is substituted with one or more substituents selected from the group consisting of linear or branched alkyl radicals; cycloalkyl, aryl, aralkyl, alkaryl radicals and halogens,

or ~~being~~ is condensed with other cyclic structures and substituted with one or more of the above mentioned substituents

which can also be bonded to the condensed cyclic structures; one or more of the above mentioned alkyl, cycloalkyl, aryl, aralkyl or alkaryl radicals and the condensed cyclic structures optionally containing one or more heteroatoms as substitutes for carbon or hydrogen atoms, or both.

17. (Original) The catalyst of claim 16, where the substituents in the cyclopolyenic 1,3-diether c) are selected from the group consisting of linear or branched C_1-C_{20} alkyl radicals; C_3C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} alkaryl and C_7-C_{20} aralkyl radicals; Cl and F.

18. (Original) The catalyst of claim 16, where the cyclopolyenic 1,3-diether c) is selected from the compounds of the general formula:



where A, B, C and D are carbon atoms or heteroatoms selected from the group consisting of N, O, S and Si; v, x, and y are 0 or 1; u and z are either 0 or 1 or 2;

provided that when u = 0:

i) A, B and C are carbon atoms and v, x and y are equal to 1; or

ii) A is a nitrogen atom, B and C are carbon atoms, v is equal to 0 and x and y are equal to 1; or

iii) A and B are nitrogen atoms, C is a carbon atom, v and x are equal to 0 and y is equal to 1; or

iv) A and B are carbon atoms, C is a nitrogen atom, v and x are equal to 1 and y is equal to 0;

when u = 1:

1) A, B, C and D are carbon atoms, v x and y are equal to 1 an z is equal to 2; or

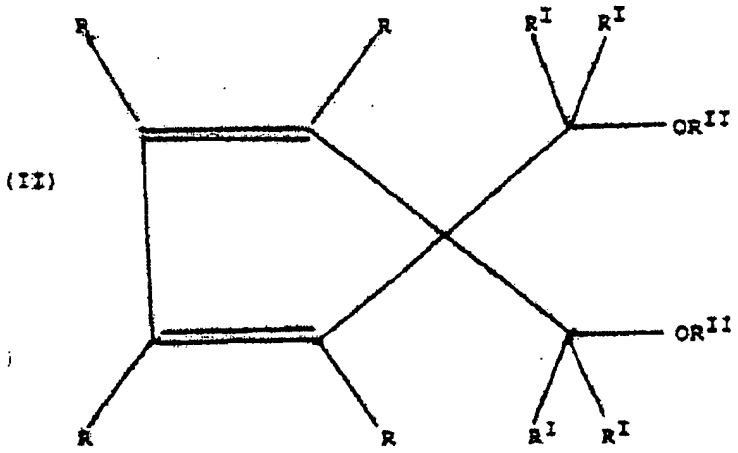
2) A and B are carbon atoms, C is a nitrogen atom, D is an oxygen atom, v and x are equal to 1, y and z are equal to 0; or

3) A, B and C are carbon atoms, D is an oxygen, nitrogen, sulfur or silicon atom, v, x and y are equal to 1 and z is equal to 0 when D is an oxygen or sulfur atom, equal to 1 when D is a silicon atom;

when u = 2:

A, B and C are carbon atoms, D represents two carbon atoms bonded to each other by a single or double bond, v, x and y are equal to 1 and z is equal to 1 when the couple of carbon atoms D is bonded by a double bond and equal to 2 when said couple is bonded by a single bond; radicals R and R^I, equal or different, are selected from the group consisting of hydrogen; halogens; C_1-C_{20} alkyl radicals, linear or branched; C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} alkaryl and C_7-C_{20} aralkyl radicals; the R^{II} radicals, equal or different, are selected from the group consisting of C_1-C_{20} alkyl radicals, linear or branched; C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} alkaryl and C_7-C_{20} aralkyl radicals, and two or more of the R radicals can be bonded to each other to form condensed cyclic structures, saturated or unsaturated, optionally substituted with R^{III} radicals selected from the group consisting of halogens; C_1-C_{20} alkyl radicals, linear or branched; C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} alkaryl and C_7-C_{20} aralkyl radicals; said radicals from R to R^{III} optionally containing one or more heteroatoms as substitutes for carbon hydrogen atoms, or both.

19. (Original) The catalyst of claim 18, where the cyclopolyenic 1,3-diether c) is selected from compounds of the general formula:



where radicals R and R^I, equal or different are selected from the group consisting of hydrogen; halogens; C_1-C_{20} alkyl radicals, linear or branched; C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} alkaryl and C_7-C_{20} aralkyl radicals; the R^{II} radicals, equal or different, are selected from the group consisting of C_1-C_{20} alkyl radicals, linear or branched; C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} alkaryl and C_7-C_{20} aralkyl radicals, and two or more of the R radicals can be bonded to each other to form condensed cyclic structures, saturated or unsaturated, optionally substituted with R^{III} radicals selected from the group consisting of halogens; C_1-C_{20} alkyl radicals, linear or branched; C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, C_7-C_{20} alkaryl and C_7-C_{20} aralkyl radicals; said radicals from R to R^{III} optionally containing one or more heteroatoms as substitutes for carbon or hydrogen atoms, or both.

20. (Original) The catalyst of claim 19, where the cyclopolyenic 1,3-diether c) is selected from the group consisting of:

1,1-bis(methoxymethyl)-cyclopentadiene;

1,1-bis(methoxymethyl)-2,3,4,5-tetramethylcyclopentadiene;

1,1-bis(methoxymethyl)-2,3,4,5-tetraphenylcyclopentadiene;

1,1-bis(methoxymethyl)indene;

1,1-bis(methoxymethyl)-2,3-dimethylindene;

1,1-bis(methoxymethyl)-4,7-dimethylindene;

1,1-bis(methoxymethyl)-4-phenyl-2-methylindene;

1,1-bis(methoxymethyl)-7-(3,3,3-trifluoropropyl)indene;

1,1-bis(methoxymethyl)-7-trimethylsilylindene;

1,1-bis(methoxymethyl)-7-trifluoromethylindene;

1,1-bis(methoxymethyl)-7-methylindene;

1,1-bis(methoxymethyl)-7-cyclopentylindene;

1,1-bis(methoxymethyl)-7-isopropylindene;

1,1-bis(methoxymethyl)-7-cyclohexylindene;

1,1-bis(methoxymethyl)-7-tert-butylindene;

1,1-bis(methoxymethyl)-7-tert-butyl-2-methylindene;

1,1-bis(methoxymethyl)-7-phenylindene;

1,1-bis(methoxymethyl)-2-phenylindene;

9,9-bis(methoxymethyl)fluorene;

9,9-bis(methoxymethyl)-2,3,6,7-tetramethylfluorene;

9,9-bis(methoxymethyl)-2,3,4,5,6,7-hexafluorofluorene;

9,9-bis(methoxymethyl)-2,3-benzofluorene;

9,9-bis(methoxymethyl)-2,3,6,7-dibenzofluorene;

9,9-bis(methoxymethyl)-2,7-diisopropylfluorene;

9,9-bis(methoxymethyl)-1,8-dichlorofluorene;

9,9-bis(methoxymethyl)-2,7-dicyclopentylfluorene;

9,9-bis(methoxymethyl)-1,8-difluorofluorene;

9,9-bis(methoxymethyl)-1,2,3,4-tetrahydrofluorene;

9,9-bis(methoxymethyl)-1,2,3,4,5,6,7,8-octahydrofluorene;

9,9-bis(methoxymethyl)-4-tert-butylfluorene;

1,1-bis(α-methoxybenzyl)indene;

1,1-bis(1'-methoxyethyl)-5,6-dichloroindene;

9,9-bis(α-methoxybenzyl)fluorene;

9,9-bis(1'-methoxyethyl)fluorene;

9-(methoxymethyl)-9-(1'-methoxyethyl)-2,3-6,7-tetrafluorofluorene;

9-methoxymethyl-9-pentoxymethylfluorene;

9-methoxymethyl-9-ethoxymethylfluorene;

9-methoxymethyl-9-(1'methoxyethyl)-fluorene.

21. (Original) The catalyst of claim 18, where the cyclopolyenic 1,3-diether c) is selected from the group consisting of 9,9-bis(methoxymethyl)xanthene, and 9,9-bis(methoxymethyl)-2,3,6,7-tetramethylxanthene.

22. (Original) The catalyst of claim 16, where the Al-alkyl compound is an Al-trialkyl.

23. (Original) The catalyst of claim 16, where the titanium compound supported on the solid catalyst component a^1) is selected from the group consisting of halides and halogen alcoholates.

24. (Original) The catalyst of claim 16, where the electron-donor compound supported on the solid catalyst component a^1) is a Lewis base containing one or more electronegative groups where the electron-donor atoms are selected from the group consisting of N, O, S, P, As or Sn.

25. (Original) The catalyst of claim 24, where the electron-donor compound supported on the solid catalyst component a^1) is an electron-donor compound that can be extracted with Al-triethyl from

the catalyst component a[1]) for at least 70% in moles, the surface area (B.E.T.) of the solid product of extraction being at least 20 m^2/g.

26. (Original) The catalyst of claim 24, where the electron-donor compound supported on the solid catalyst component a[1]) is a phthalic acid ester.

27. (Original) The catalyst of claim 24, where the electron-donor compound supported on the solid catalyst component a[1]) is an ether containing two or more ether groups that, under standard conditions, is complexed with anhydrous magnesium chloride for less than 60 mmoles per 100 g of chloride and with $TiCl_4$ does not undergo substitution reactions, or it only does so for less that 50% in moles.

28. (Currently Amended) The catalyst of claim 24, where the electron- donor compound supported on the solid catalyst component a[1]) is a cyclopolyenic 1,3-diether in which only the carbon atom in position 2 belongs to a cyclic or polycyclic structure made up of 5, 6, or 7 carbon atoms, or 5-n or 6-n` carbon atoms, and

respectively n atoms of nitrogen and n` heteroatoms selected from the group consisting of N, O, S and Si, where n is 1 or 2 and n` is 1, 2 or 3,

wherein said structure ~~containing~~ contains two or three unsaturations and optionally

~~being~~ is condensed with other cyclic structures,

or is substituted with one or more substituents selected from the group consisting of linear or branched alkyl radicals; cycloalkyl, aryl, aralkyl, alkaryl radicals and halogens,

or ~~being~~ is condensed with other cyclic structures and substituted with one or more of the above mentioned substituents which can also be bonded to the condensed cyclic structures; one or more of the above mentioned alkyl, cycloalkyl, aryl, aralkyl or alkaryl radicals and the condensed cyclic structures optionally containing one or more heteroatoms as substitutes for carbon or hydrogen atoms, or both.

29. (Original) A process for the polymerization of CH_2=CHR olefins, where R is hydrogen or a 1-6 carbon alkyl radical or an aryl radical, or mixtures of said olefins or of said olefins and diolefins, said process being carried out in liquid phase in the

presence or not of an aliphatic or aromatic hydrocarbon solvent, or in gas phase, or by combining polymerization stages in liquid phase and in gas phase, in the presence of a catalyst as defined in claim 12 or 16.

Claims 30-40 (canceled)